

ENVIRONMENTAL Fact Sheet



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Overview of the Lead and Copper Rule

The Lead and Copper Rule, which became effective in December 1992, requires treatment when lead and/or copper in drinking water exceeds certain levels.

Lead (Pb) enters drinking water mainly from the corrosion of lead-containing household plumbing. Since lead and copper (Cu) contamination generally occurs after water has left the water system, the best way for the water system operator to find out if customer water is contaminated is to test the water that has come from a household faucet. Controlling the corrosiveness of the water supply can prevent this type of contamination. If corrosion control is not sufficient, lead-containing materials within the control of the water system (such as lead service lines) may have to be replaced. At no time will a water system have to replace a homeowner's pipes.

Action Levels

Maximum Contaminant Level Goals (MCLG): Water systems should try to supply water with no lead and with no more than 1.3 milligrams of copper per liter (mg/L) of water. These are non-enforceable health goals.

	MCLG Mg/L	Action Level mg/L
Lead	0	0.015
Copper	1.3	1.3

Action Levels: When the concentration of lead or copper reaches the action level in 10 percent or more of the required samples, the water system is required to carry out the water treatment requirements of the rule. These enforceable treatment requirements are described below.

Monitoring Requirements

Lead/copper monitoring at high-risk homes

Water systems must complete a materials evaluation of their distribution system and/or review other information to target homes that are at high risk of lead/copper contamination. Monitoring is to be conducted at the tap in these homes, with the number of tap-sampling sites based on the population served. One sample is required at each site.

Monitoring Requirements Number of Initial Sampling Sites		
System Size	Taps for Pb/Cu	Taps for WQPs
>100,000	100	25
10,001-100,000	60	10
3,301-10,000	40	3
501-3,300	20	2
101-500	10	1
<100	5	1

Additional monitoring for other water quality parameters (WQPs) affecting corrosion is required to optimize treatment and determine compliance with state lead/copper standards. Two types of systems must perform this monitoring under the following conditions:

- Large systems serving more than 50,000 persons, regardless of the lead/copper levels in tap samples.
- Smaller systems serving less than 50,000 persons, if either action level is exceeded in tap samples.

Two types of sampling sites are specified for this purpose:

- *Within* the distribution system, with the number of sites based on the population served (sites may be the same as for the coliform sampling). Two samples are required from each site.
- Two samples at each *entry point* to the distribution system.

Monitoring Frequencies

Initially, systems must collect home *tap* samples for lead and copper analysis and samples for other water quality parameters (WQPs) every six months. In systems that are required to install corrosion control treatment, follow-up samples for other water quality parameters must be taken from *within* the distribution system every six months and from *entry points* to the distribution

system every two weeks. Both the number of sampling sites and the frequency may be reduced if the action level is met or the system maintains optimal treatment.

Monitoring Requirements Frequency of Sampling			
Monitoring Period	Pb/Cu Taps	WQPs Home within dist.	Point of entry
Initial	6 mo.	6 mo.	6 mo.
After Treatment Reduced	6 mo.	6 mo.	2 wk.
---conditional	1 yr.	6 mo.	2 wk.
---final	3 yr.	3 yr.	2 wk.

Water Treatment Requirements

Four types of actions are required to remedy high lead levels and two are required for high levels of copper. Once a system finds that more than 10 percent of all tap-monitoring results exceed the action levels, the system must begin to carry out the first three actions.

1. **Corrosion control treatment.** Systems are required to first monitor, and depending on size, conduct corrosion control studies and recommend a corrosion control treatment method to the Department of Environmental Services (DES). Upon the approval of the DES, treatment is to be installed and demonstrated to be effective according to criteria set by the DES. Treatment options are pH and alkalinity adjustment, calcium adjustment and silica or phosphate-based corrosion inhibition.

2. **Source Water Treatment.** Systems must first monitor their source water for the presence of lead/copper, and if necessary, recommend a treatment method to the DES. Treatment options are ion exchange, lime softening, reverse osmosis and coagulation/filtration. Once the DES approves a treatment, systems will have two years to install it and one more year to conduct follow-up monitoring. If treatment is not required, or if the treated water does not exceed the maximum lead/copper levels permitted by the DES, source water monitoring will be synchronized with the system's other monitoring schedules.
3. **Public Education.** Public education materials developed by EPA will inform customers about the health effects of lead, and explain what they can do at home, at work or at school to reduce their exposure. The system must begin delivering the materials within 60 days of exceeding the lead action level. The materials include public service announcements (for medium and large systems) to be submitted periodically to television and radio stations, and other pamphlets or brochures to be delivered directly to customers, newspapers, hospitals, and schools etc. Public education is not required if the water system exceeds only the copper action level.

If a system continues to exceed the lead action level after installing optimal corrosion control and source water treatment, the fourth action must be taken:

4. **Lead Service Line Replacement.** Lead service lines that contribute more than 0.015 mg/L to tap water lead levels must be replaced. A system must replace 7 percent of its lead lines each year, and must replace all lines within 15 years.

For Additional Information

Please contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or dwgbinfo@des.state.nh.us or visit our website at www.des.nh.gov/dwgb. All of the bureau's fact sheets are on-line at www.des.nh.gov/dwg.htm.

Note: This fact sheet is accurate as of January 2007. Statutory or regulatory changes, or the availability of additional information after this date may render this information inaccurate or incomplete."